

**REMARKS:**

Claims 22, 24, and 32 have been canceled without prejudice.  
Claims 1-21, 23, 25-31 and 33-36 are pending in the application.

The Office objected to claim 1 for containing the informal term “on the on the”. The second “on the” has been deleted from claim 1 to correct this informality.

The Office rejected claims 1-23, 25-31 and 33-36 under 35 U.S.C. 102(b) as being anticipated by Zaleski et al (US 5,813,480).

Independent claims 1, 10, 21 and 29 have been amended now to make it clear that the transmitted output of the multiplexer is in analog form. Minor amendments have also been made to dependent claims 33-36 to make them consistent with the amended independent claims.

In the present invention, signals from sensors on a down hole drill bit are sent to a multiplexer in analog form and are transmitted from the multiplexer in analog form. This is an important and novel improvement over Zaleski et al., which states that the “monitoring system 225 subjects the analog system to an analog-to-digital converter 229. *The digital signal is then multiplexed*” (column 12, rows 17-20, emphasis added).

The specification of the present invention clearly describes the advantages in downhole tools of the apparatus and methods of analog multiplexing and analog transmitting data signals, as opposed to converting analog signals to digital form and then multiplexing and transmitting the digital signal signals, as described in the above prior art.

Independent claims 1, 10, 21 and 29 have been amended now to clearly state the analog signals are multiplexed and the multiplexed analog signals are then transmitted. Applicants believe that the amendments to the claims now clearly differentiate the claimed invention from the prior art.

Accordingly, Applicants believe that claims 1, 10, 21 and 29 as amended are novel and allowable over the prior art and therefore respectfully request allowance of these claims.

Dependent claim 22 has been canceled now as its limitations have been incorporated into amended independent claim 21. Dependent claims 33-36 have been amended to maintain consistent terminology with amended base claim 29. Since pending dependent claims 2-9, 11-20, 23, 25-31 and 33-36 now depend from allowable base claims, Applicants believe that these claims are also allowable, and therefore respectfully request allowance of claims 2-9, 11-20, 23, 25-31 and 33-36 by the Office.

The Office rejected claims 24 and 32 under 35 U.S.C. 103(a) as being unpatentable over Zaleski et al. in view of Van Steenwyk et al (US 4,471,533).

Claims 24 and 32 have been canceled now without prejudice, rendering the above rejection under 35 U.S.C. 103(a) moot.

In view of the arguments and amendments made herein, Applicants respectfully submit that the application is now in condition for allowance. Accordingly, Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Please charge Deposit Account No. 180584 in the amount of \$120, the fee required under 37 CFR 1.17(a)(1) for a one month extension for time. It is believed that there are no other fees due at this time. However, the Commissioner is hereby authorized to charge any fees which may be required at any time during the prosecution of this application without specific authorization, or

credit any overpayment, to Deposit Account 180584. If there are any questions concerning the above, please contact the undersigned at (281) 878-5658.

Respectfully submitted,

*/Jeffery E. Daly/*

Electronically signed by Jeffery E. Daly, Reg. No. 44,640, on 7/26/2006.

Grant Prideco, L.P.  
400 N. Sam Houston Prkwy East  
Suite 900  
Houston, TX 77060  
Ph: 281-878-5658  
Fax: 281-878-5720  
e-mail: [jeffery.daly@grantprideco.com](mailto:jeffery.daly@grantprideco.com)

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, Alexandria VA 22313-1450 or by facsimile or electronic transmission to the U.S. Patent and Trademark Office on the date shown below.

<u>7/26/06</u>	<u>/Jeffery E.Daly/</u>
Date	Electronic Signature